

REMARKS

Claims 1-21 are pending in the present application. Claims 3, 4, 8 and 9 were amended. New claims 13-21 have been added.

Applicant notes with thanks and appreciation that claims 3-7 and 9-12 were found to have allowable subject matter and would be allowable if rewritten to overcome the rejections under 35 USC §112, second paragraph, and to include the limitations of the base claims and any intervening claims.

Claims 1-12 were rejected under 35 USC §112, second paragraph, as being indefinite. The claims have been amended to address the insufficient antecedent for "the workpieces". The independent claims now recite "workpieces".

Amended claim 3 is claim 3 written in independent form including all the limitations of claim 1. Accordingly, claim 3 and the claims that depend therefrom are patentable.

Amended claim 9 is claim 9 rewritten in independent form to include the limitations of claim 8. Accordingly, claim 9 and the claims that depend therefrom are patentable.

Claim 15 is claim 4 rewritten in independent form. Accordingly, claim 15 and the claims that depend therefrom are patentable.

Claims 1, 2 and 8 were rejected under 35 USC 102(e) as being anticipated by *US Patent 5829664 (Spinella)*. *Spinella* does not teach or suggest a friction stir welding with all the limitations of independent claims 1 and 8. *Spinella* does not disclose or suggest "supplying additional heat in excess of any other heat that may be supplied to the joint in any other manner by the welding means" as claimed in independent claims 1 and 8. There is a purpose for supplying heat in excess of any heat supplied through the welding means.

Spinella discloses two methods of supplying additional electrical heat to the joint. In the first method, the power supply is connected between the welding means and the work piece (Fig 1) and in the second one (Fig 2) the connection is made between an electrode advancing ahead of the welding tool and the welding tool itself. In both cases the heating is supplied to the joint through the welding means. This is further emphasized by the insulating washer (25) which directs the current solely through the pin of the welding means thereby confining the heat to the momentarily welded portion of the joint. See, e.g. *Spinella* at column 3, lines 4-12 and 40-42.

One of the objectives of the invention is to prolong the serviceable life of the welding probe. One cause of short life spans of welding probes is overheating. Therefore it is very common to supply cooling to the probe as taught by *Spinella* instead of extra heating. *Spinella* teaches cooling to prolong the life of the probe and thus, not only fails to teach or

Applicant: ESAB AB
Serial Number: 09/402185
Attorney Docket: 5746
Page 17 of 18

suggest a method or apparatus for friction stir welding with all the limitations of the independent claims it also teaches away from addition of heat in excess of the heat supplied by the welding means.

CONCLUSION

Having obviated the Examiner's objections, Applicant hereby seeks an early indication of allowance.

A check for \$190 accompanies this response to cover the cost of the excess claim and independent claims.

104
106